
Socioeconomic Monitoring Program Florida Keys National Marine Sanctuary

Preliminary findings from Two Years of Monitoring the Commercial Fisheries:

Impact of No Take Areas

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By

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INTRODUCTION

The Socioeconomic Monitoring Program for the Florida Keys National Marine Sanctuary (FKNMS) was designed in 1998 by 50 social scientists and community stakeholders. The program was designed to complement the ecological monitoring program.

The primary goal of the Research and Monitoring Program is to provide the knowledge necessary to make informed decisions about protecting the biological and natural ecosystem processes of the Sanctuary and its resources. [FKNMS Final Management Plan, Volume 1, page 148]

Reaching the above goal requires information on the socioeconomic implications of the implementation of the Sanctuary management plan. Place beside comparable ecological information, a socioeconomic perspective provides insight into changes in resource use and the contribution of Sanctuary actions towards a sustainable economy in the Florida Keys.

The **primary goal of socioeconomic monitoring** is therefore to detect and document resultant changes in Sanctuary resource utilization patterns and their impact on market and non market economic values of Sanctuary resources.

One of the key objectives to fulfill the above goal is the monitoring and assessing socioeconomic impacts on groups whose activities were either enhanced, curtailed or displaced by Sanctuary regulations.

In the FKNMS Final Management Plan, 23 “no take areas” were established. Twenty-two (22) of the areas were called Sanctuary Preservation Areas (SPAs) and one was called an Ecological Reserve (Sambos ER). All of these areas displaced commercial fishing activities to some extent. There was an attempt to minimize the impacts when designing the areas. The Sambos ER is different from the SPAs in that it is significantly large in size (9 nautical square miles), whereas the SPAs are generally small (a few hectares). The SPAs were generally designed to resolve conflicts between user groups, whereas the Sambos ER was designed to protect an ecosystem.

In the EIS/Final Management Plan, it was concluded that there would be short-run losses to the commercial fisheries as a result of the SPAs and Sambos ER, but that in the long-run there would be gains due to fish stock enhancement (replenishment effect). These kinds of conclusions are speculation based on experiences elsewhere.

In 1998, NOAA established a set of commercial fishing panels to monitor the impacts of Sanctuary regulations on the commercial fisheries. Thomas Murray and Associates, Inc. was given a contract to set-up the commercial fishing panels and collect information to assess their catch and financial performance. Four panels:

1. “General Fishermen”. This panel consists of fishermen with active saltwater product licenses (SPLs) who did not fish in the SPAs or Sambos ER. Also excluded from this group were fishermen that fished in the Dry Tortugas, since this would be a future area where no take areas were going to be considered.
2. “Sambos Fishermen”. This panel consists of fishermen with active SPLs that fished in the Sambos ER prior to July 1997 (date when the Sambos ER no take regulation went into effect).
3. “Tortugas Fishermen”. This panel consists of fishermen with active SPLs that fished in the area generally known as the Dry Tortugas [as referenced by the Florida Marine Research Institute (FMRI) statistical grids 2.0 and 2.9 for gathering information through the trip ticket program].
4. “Marine Life Collectors”. This panel consists of fishermen with active SPLs that report collecting marine species for the aquarium trade.

A complete description of the panels, including demographic profiles is provided in Thomas J. Murray & Associates (2000).

Were there Short-run Losses to the Commercial Fisheries?

Although only two years of monitoring data is currently available, we can test the hypothesis that the SPAs and Sambos ER resulted in short-run losses to the commercial fisheries. From Thomas J. Murray & Associates (2000), we have the harvest values, harvest costs and net earnings for the “General fishermen” and the “Sambos fishermen” for years 1997-98 and 1998-99. There were six (6) fishermen in each panel. Table 1 summarizes the results of monitoring the two panels for the two years.

Table 1. Harvest Value, Costs and Net Earnings:
1997-98 and 1998-99

Panel	1997-98 Harvest Value	1998-99 Harvest Value	% Change 1997-98 to 1998-99
General	\$96,523	\$113,379	+17.5
Sambos	\$97,725	\$129,666	+32.7
	Harvest Cost	Harvest Cost	
General	\$65,717	\$75,801	+15.3
Sambos	\$70,000	\$83,253	+18.9
	Net Earnings	Net Earnings	
General	\$30,806	\$37,577	+22.0
Sambos	\$27,725	\$45,913	+65.6

Net earnings for both panels showed increases from 1997-98 to 1998-99 with the Sambos fishermen showing much greater increases in net earnings. Thus, *there is no support for the hypothesis that fishermen displaced from the “no take areas” suffered short-run losses.* The original speculation made in the FKNMS EIS/Final Management Plan does not appear to be correct. There does not appear to be short-run losses associated with the Sambos ER.

There are several caveats that might influence the above results. First, the monitoring program began in September 1998 and hurricane Georges hit the Florida Keys on September 25, 1998. The hurricane resulted in a large amount of lost gear and raised the costs over a typical year. The impact of this would be to overstate the rise in net earnings from 1997-98 to 1998-99. Second, the State of Florida runs the Lobster Trap Reduction Program. The reduction in the number of lobster traps has generally increased catch per unit of effort (CPUE) and reduced costs per unit of effort resulting in increased earnings. This latter factor however can never be separated out from the effects of the “no take” regulations, nor should it be. The whole point of the FKNMS is integrated management and the “no take” regulations were integrated with the Lobster Trap Reduction Program. The net effect is there have been no losses to the commercial fishermen displaced from the Sambos ER.

FUTURE MONITORING

The third year of data collection for the commercial fishing panels is currently underway. An important component of this effort is the Tortugas panel. There will be three years of baseline data to assess the impact of the Tortugas ER, since it will not go fully into effect until July 2001. The Tortugas ER is 151 nautical square miles and is currently the largest “no take” area in the U.S. Future monitoring efforts will test whether there are losses associated with the Tortugas ER.

REFERENCES

Thomas J. Murray & Associates, Inc. 2000. Socio-Economic Baseline Development Florida Keys National Marine Sanctuary: 1998-2000. Draft Presentation. Gloucester Point, Virginia 23062.

Florida Keys National Marine Sanctuary (FKNMS). 1996. Final Management Plan/Environmental Impact Statement, Volume I of III, Management Plan. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Office of Ocean and Coastal Resource Management, Sanctuaries and Reserves Division, Silver Spring, MD 20910.